



ICF International / Laboratory Data Consultants

Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300; Fax: (510) 412-2304.

MEMORANDUM

TO: Chris Lichens, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Task Order Manager (TOM) RF
Quality Assurance (QA) Program, MTS-3

FROM: Doug Lindelof, Data Review Task Manager [Signature]
Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No.: EP-W-06-041
Technical Direction Form No.: 00105041 Amendment 6

DATE: June 28, 2007

SUBJECT: Review of Analytical Data, **Tier 2**

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

Site:	Omega Chem OU2
Site Account No.:	09 BC LA02
CERCLIS ID No.:	CAD042245001
Case No.:	Not Provided
SDG No.:	06-1676, 06-1689, 06-1704, 06-1754, and 06-1764
Laboratory:	Applied Physics & Chemistry Laboratory (APCL)
Analysis:	1,2,3-Trichloropropane (1,2,3-TCP) and n-Nitrosodimethylamine (NDMA)
Samples:	36 Water Samples (see Case Summary)
Collection Date:	March 7, 8, 9, 13, and 14, 2006
Reviewer:	Santiago Lee, ESAT/Laboratory Data Consultants (LDC)

This report has been reviewed by the EPA TOM for the ESAT contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

SAMPLING ISSUES: ☐ Yes ☒ No

Data Validation Report – Tier 2

Case No.: Not Provided
SDG No.: 06-1676, 06-1689, 06-1704, 06-1754, and 06-1764
Site: Omega Chem OU2
Laboratory: APCL
Reviewer: Santiago Lee, ESAT/LDC
Date: June 28, 2007

I. CASE SUMMARY

Sample Information

SDG 06-1676 Samples: OC2-MW8D-W-4-160, OC2-MW8D-W-0-161, OC2-MW8D-W-2-162, OC2-MW4A-W-0-163, OC2-MW4B-W-0-164, OC2-MW4C-W-0-165, OC2-MW6-W-5-166, OC2-MW5-W-0-167, and OC2-MW5-W-1-168
SDG 06-1689 Samples: OC2-MW9B-W-0-169, OC2-MW9B-W-4-170, OC2-MW9A-W-0-171, OC2-MW1B-W-0-172, OC2-MW1A-W-0-173, and OC2-MW2-W-0-174
SDG 06-1704 Samples: OC2-MW11-W-4-175, OC2-MW11-W-0-176, OC2-MW11-W-1-177, OC2-MW11-W-2-178, OC2-MW10-W-0-179, and OC2-MW3-W-0-180
SDG 06-1754 Samples: OC2-MW17B-W-0-181, OC2-MW17B-W-4-182, OC2-MW17C-W-0-183, OC2-MW16A-W-0-184, OC2-MW16B-W-0-185, and OC2-MW16C-W-3-186
SDG 06-1764 Samples: OC2-MW16C-W-4-187, OC2-MW16C-W-0-188, OC2-MW18A-W-0-189, OC2-MW18A-W-1-190, OC2-MW18A-W-2-191, OC2-MW18B-W-0-192, OC2-MW18C-W-0-193, OC2-MW23B-W-0-194, and OC2-MW23C-W-0-195
Concentration and Matrix: Low Concentration Water
Analysis: 1,2,3-TCP (GC) and NDMA (GC/MS/MS CI)
SOW: EPA Methods 504.1 and 1625
Collection Date: March 7, 8, 9, 13, and 14, 2006
Sample Receipt Date: March 7, 8, 9, 13, and 14, 2006
Extraction Date: March 9, 10, and 16, 2006
Analysis Date: March 10, 11, 14, 16, 17, 22, and 23, 2006

Field QC

Field Blanks (FB): OC2-MW8D-W-2-162, OC2-MW11-W-2-178, and OC2-MW18A-W-2-191
Trip Blanks (TB): OC2-MW8D-W-4-160, OC2-MW9B-W-4-170, OC2-MW11-W-4-175, OC2-MW17B-W-4-182, and OC2-MW16C-W-4-187
Equipment Blanks (EB): OC2-MW16C-W-3-186
Background Samples (BG): Not Provided
Field Duplicates (D1): OC2-MW5-W-0-167 and OC2-MW5-W-1-168
Field Duplicates (D2): OC2-MW11-W-0-176 and OC2-MW11-W-1-177
Field Duplicates (D3): OC2-MW18A-W-0-189 and OC2-MW18A-W-1-190

Laboratory QC

Method Blanks & Associated Samples:

06G1343MB01: (1,2,3-TCP) SDGs 06-1676 and 06-1689
06G1337MB01: (NDMA) SDGs 06-1676 and 06-1689

06G1344MB01: (1,2,3-TCP) SDG 06-1704
06G1380MB01: (NDMA) SDGs 06-1704, 06-1754, and 06-1764
06G1384MB01: (1,2,3-TCP) SDG 06-1754
06G1385MB01: (1,2,3-TCP) SDG 06-1764

Tables

1B: Data Qualifier Definitions for Organic Data Review

Sampling Issues

None.

Additional Comments

As directed by the EPA TOM, a Tier 2 data review was performed (review all QC results and calibrations, minus calculation check). A Table 1A is not requested.

For the NDMA analysis, decafluorotriphenylphosphine (DFTPP) was not analyzed. Since NDMA is analyzed by the chemical ionization (CI) technique, no adverse effect is expected.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*;
- ESAT Region 9 Standard Operating Procedure 902, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Pesticide/PCB Data Packages*;
- EPA Method 504.1, *1,2-Dibromoethane (EDB), 1,2-Dibromo-3-chloro-propane (DBCP), and 1,2,3-Trichloropropane (123TCP) in Water by Microextraction and Gas Chromatography*, Revision 1.1, 1995;
- EPA Method 1625C, *Semivolatile Organic Compounds by Isotope dilution GC/MS*, June 1989; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	<u>Parameter</u>	<u>Acceptable</u>	<u>Comment</u>
1.	Holding Time/Preservation	Yes	
2.	GC/MS and GC Performance	Yes	

3.	Initial Calibration	Yes	
4.	Continuing Calibration	Yes	
5.	Laboratory Blanks	Yes	
6.	Field Blanks	Yes	
7.	Surrogate (Method 504.1)	Yes	
8.	Labeled Compound (Method 1625)	No	C
9.	Matrix Spike/Matrix Spike Duplicates	Yes	
10.	Laboratory Control Samples/Duplicates	Yes	
11.	Internal Standard	Yes	
12.	Compound Identification	Yes	
13.	Compound Quantitation	No	A, B
14.	System Performance	Yes	
15.	Field Duplicate Sample Analysis	Yes	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

A. The following detected results are qualified as estimated and should be flagged "J".

- NDMA in samples OC2-MW8D-W-0-161, OC2-MW4A-W-0-163, OC2-MW5-W-0-167, OC2-MW5-W-1-168, OC2-MW9A-0-171, OC2-MW2-W-0-174, OC2-MW16A-W-0-184, OC2-MW18A-W-0-189, OC2-MW18A-W-1-190, and OC2-MW23C-W-0-195 (below the practical quantitation limit)

Results below the practical quantitation limits (PQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

- B. The laboratory reported the NDMA sample practical quantitation limit (PQL) as 0.002 ug/L. However, the area for low standard of the initial calibration is only 1074 (see attached quantitation report, p. 1668 in 06-1676 data package). Furthermore, signal to noise (S/N) ratios and areas for NDMA detected results are relatively low. For example, the S/N ratio is only 8 and the area is only 1009 for the concentration of 0.002 ug/L in sample OC2-MW4B-W-0-164 (see attached quantitation report, p. 1641 in 06-1676 data package). In the reviewer's professional judgment, the sample PQL should be raised to 0.02 ug/L. Non-detected sample results should be reported as 0.02U.
- C. For the NDMA analysis, the laboratory did not spike the samples and method blanks with a labeled compound (i.e., surrogate; see Method 1625C Sections 6.8, 10.2.1.3, and 10.2.3.2 and Figure 4). Consequently, the extraction efficiency (surrogate recovery) for NDMA cannot be evaluated. The NDMA-d6 spiked by the laboratory was used as an internal standard.

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," October 1999.

- U The analyte was analyzed for but was not detected above the reported sample quantitation limit.
- L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Target Compound #2 from 1676-1 f=0.001.sms

Sample ID:	1676-1 F=0.001	Last Calibration:	2/21/2006 1:18 PM
Acquisition Date:	3/14/2006 4:00 PM	Calculation Date:	3/14/2006 4:18 PM
Method:	c:\... \ndma005.mth	Vial:	10
Volume:	3.0000	Multiplier:	1.000000
Data File:	c:\data\2006\06g1337\1676-1 f=0.001.sms		

Compound Information

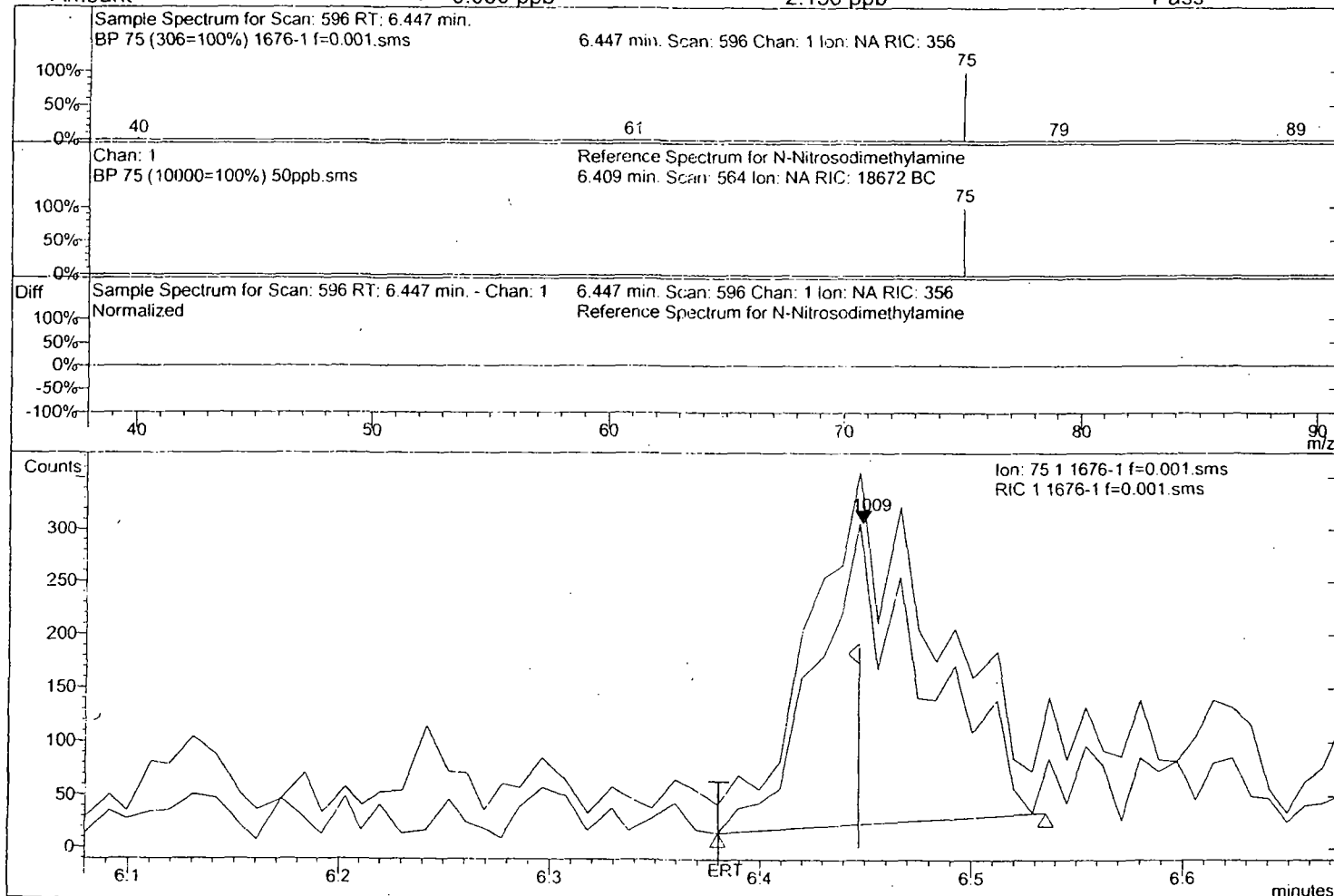
Peak Name:	N-Nitrosodimethylamine	CAS Number:	62-75-9	Identified
Result Index:	2	Compound Number:	2	

Identification

Parameter	Specification	Actual	Status
Search Type	Retention Time		
Retention Time	6.380 +/- 0.300	6.449 min.	Pass
Match Result		N/A	

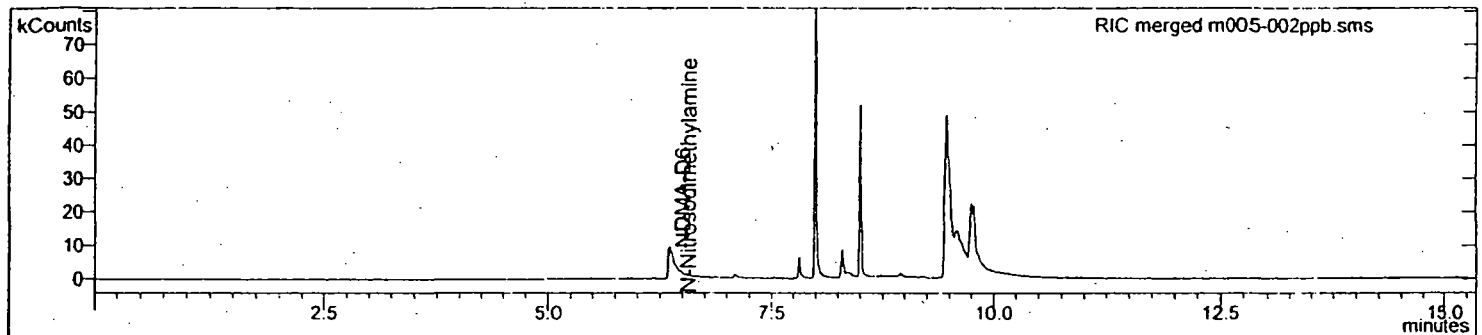
Integration and Quantitation

Parameter	Specification	Actual	Status
Quan Ions	75		
IS Peak Name	NDMA-D6		
Calibration Equation	Linear, Force, None	y = +0.7286x	
S/N Ratio		8	
Peak Detection	Normal		
Slope Sensitivity	20		
Peak Width	20.00 sec	3.1 sec	
Baseline Type	Normal		
Tangent Percent	10%		
Area	>=100	1009	Pass
Height		283	
Amount	>= 0.000 ppb	2.130 ppb	Pass



NDMA BY GC/MS/MS ION TRAP Operator: James Feng

Sample ID:	M005-002PPB	Last Calibration:	2/21/2006 1:18 PM
Acquisition Date:	2/21/2006 10:20 AM	Calculation Date:	2/21/2006 1:18 PM
Method:	c:\... \ndma005.mth	Vial:	40
Volume:	3.0000	Multiplier:	1.000000
Data File:	c:\data\2006\06g1246\m005-002ppb.sms		

Target Compounds

#	RT	Compound Name	Res Type	Quan Ions	Area	Amount
1	6.363	NDMA-D6	Id.	81	50116	1.000 RRF
2	6.423	N-Nitrosodimethylamine	Id.	75	1074	0.536 RRF

Unidentified Peaks

None